

THE CLAIMS

What is claimed is:

1. A method for providing access to a communications medium, the communications medium being suitable for allowing use of a plurality of Home Phoneline Network Association (HPNA) v2 frames, each HPNA v2 frame being timed to allow an Inter-Frame Gap (IFG) having a duration that is substantially a duration defined by an HPNA v2 protocol specification, the method comprising steps of:

generating a message for transmission to an enhanced station (STA), the enhanced STA being one of a Media Control Station (MC STA) and a non-Media Control Station (non-MC STA); and

generating at least one enhanced frame containing the message on the communications medium, each enhanced frame having timing to allow a Shortened Inter-Frame Gap (SIFG), each SIFG having a duration that is not recognized by a HPNA v2 STA as a duration defined by an HPNA v2 protocol specification for an IFG and permitting each enhanced frame priority over pending HPNA v2 frames.

2. The method according to claim 1, wherein each SIFG is less than about 17 μ sec in duration.

3. The method according to claim 1, wherein at least one enhanced frame

includes an End-of-Frame (EOF) sequence portion.

4. The method according to claim 3, wherein at least one EOF sequence portion is different from an EOF sequence defined by an HPNA v2 protocol specification for an EOF sequence of an HPNA v2 frame.

5. The method according to claim 3, wherein at least one enhanced frame having the EOF sequence portion includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

6. The method according to claim 5, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

7. The method according to claim 1, wherein at least one enhanced frame includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

8. The method according to claim 7, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the

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9. The method according to claim 1, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

10. A method for providing contention-free access to a communications medium, the communications medium being suitable for allowing use of a plurality of Home Phoneline Network Association (HPNA) v2 frames, each HPNA v2 frame being timed to allow an Inter-Frame Gap (IFG) having a duration that is substantially a duration defined by an HPNA v2 protocol specification, the method comprising steps of:

generating at least one enhanced frame on the communications medium, each enhanced frame having timing to allow a Shortened Inter-Frame Gap (SIFG), each SIFG having a duration that is not recognized by a HPNA v2 STA as a duration defined by an HPNA v2 protocol specification for an IFG and permitting each enhanced frame priority over pending HPNA v2 frames; and

providing contention-free access to the communications medium during each enhanced frame so that only one enhanced station at a time sends a message during an enhanced frame, each enhanced being one of a Media Control Station (MC STA) and a non-Media Control Station (non-MC STA).

11. The method according to claim 10, wherein each SIFG is less than about 17 μ sec in duration.

12. The method according to claim 10, wherein at least one enhanced frame includes an End-of-Frame (EOF) sequence portion.

13. The method according to claim 12, wherein at least one EOF sequence portion is different from an EOF sequence defined by an HPNA v2 protocol specification for an EOF sequence of an HPNA v2 frame.

14. The method according to claim 12, wherein at least one enhanced frame having the EOF sequence portion includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

15. The method according to claim 14, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

16. The method according to claim 10, wherein at least one enhanced frame

includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

17. The method according to claim 16, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

18. The method according to claim 10, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

19. A communications network having a communications medium, the communications medium being suitable for allowing use of a plurality of Home Phoneline Network Association (HPNA) v2 frames, each HPNA v2 frame being timed to allow an Inter-Frame Gap (IFG) having a duration that is substantially a duration defined by an HPNA v2 protocol specification, the communications network comprising:

at least one non-Media Control Station (non-MC STA) coupled to the communications medium; and

a Media Control Station (MC STA) generating at least one enhanced frame in the communications medium, each enhanced frame having timing to allow a Shortened

· Inter-Frame Gap (SIFG), each SIFG having a duration that is not recognized by a HPNA v2 STA as a duration defined by an HPNA v2 protocol specification for an IFG and permitting each enhanced frame priority over pending HPNA v2 frames.

20. The communications network according to claim 19, wherein each SIFG is less than about 17 μ sec in duration.

21. The communications network according to claim 19, wherein at least one enhanced frame includes an End-of-Frame (EOF) sequence portion.

22. The communications network according to claim 21, wherein at least one EOF sequence portion is different from an EOF sequence defined by an HPNA v2 protocol specification for an EOF sequence of an HPNA v2 frame.

23. The communications network according to claim 21, wherein at least one enhanced frame having the EOF sequence portion includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

24. The communications network according to claim 23, wherein at least one

enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

25. The communications network according to claim 19, wherein at least one enhanced frame includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

26. The communications network according to claim 25, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

27. The communications network according to claim 19, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

28. A communications network having a communications medium, the communications medium being suitable for allowing use of a plurality of Home Phoneline Network Association (HPNA) v2 frames, each HPNA v2 frame being timed to allow an Inter-Frame Gap (IFG) having a duration that is substantially a duration defined by an HPNA v2 protocol specification, the communications network comprising:

a plurality of enhanced stations (STAs) coupled to the communications medium; and

a Media Control Station (MC STA) generating at least one enhanced frame in the communications medium, each enhanced frame having timing to allow a Shortened Inter-Frame Gap (SIFG), each SIFG having a duration that is not recognized by a HPNA v2 STA as a duration defined by an HPNA v2 protocol specification for an IFG and permitting each enhanced frame priority over pending HPNA v2 frames, the MC STA providing contention-free access to the communications medium to an enhanced STA during each enhanced frame so that only one enhanced STA at a time sends a message during an enhanced frame, each enhanced being one of a Media Control Station (MC STA) and a non-Media Control Station (non-MC STA).

29. The communications network according to claim 28, wherein the MC STA is an enhanced STA.

30. The communications network according to claim 28, wherein each SIFG is less than about 17 μ sec in duration.

31. The communications network according to claim 28, wherein at least one enhanced frame includes an End-of-Frame (EOF) sequence portion.

32. The communications network according to claim 31, wherein at least one EOF sequence portion is different from an EOF sequence defined by an HPNA v2 protocol specification for an EOF sequence of an HPNA v2 frame.

33. The communications network according to claim 32, wherein at least one enhanced frame having the EOF sequence portion includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

34. The communications network according to claim 33, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.

35. The communications network according to claim 28, wherein at least one enhanced frame includes a preamble that is different from a preamble defined by an HPNA v2 protocol specification for a preamble of an HPNA v2 frame.

36. The communications network according to claim 35, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a

duration of the enhanced frame.

37. The communications network according to claim 28, wherein at least one enhanced frame includes a Time Duration (TD) field containing information relating to a duration of the enhanced frame.